

April 1, 2016

David Gutierrez
SGM Program Manager
Department of Water Resources
Sacramento, CA

via email: SGMPS@water.ca.gov

Dear Mr. Gutierrez:

We appreciate the opportunity to comment on DWR's Sustainable Groundwater Management Act (SGMA) Draft Emergency Regulations for Groundwater Sustainability Plans and Alternatives (Draft Regulations). We commend DWR, including you and your SGM Program team, for conducting an inclusive process and for carefully considering comments from a range of stakeholders in developing its final version. We also commend DWR for working to craft regulations that, if followed, will ensure thorough, detailed, and effective plans, and will provide Californians with much more information about groundwater use than has ever existed before.

The importance of governance for SGMA implementation

Our comments focus on specific elements of SGMA implementation, namely those related to governance and institutional design for Groundwater Sustainability Agencies (Agencies).

Two simple observations motivate our focus on these topics. First, without an Agency capable of successfully implementing it, even the best Groundwater Sustainability Plan (Plan) will have limited value. Second, governmental forms, once put in place, often tend to be difficult to change. Together, these observations strongly suggest that designing robust Agencies from the start is one of the most important things that local entities will need to do to ensure SGMA's goals are met. Because of the crucial role that Agency governance structures will play in creating the potential to achieve sustainable groundwater management, it is in the interests of the state to help local entities successfully navigate Agency formation, and to pay careful attention to ensuring that they do.



We, along with a multi-institutional group, are co-authors of a report¹ recently released through UC Berkeley School of Law's Center for Law, Energy and the Environment (CLEE) and the UC Water Security and Sustainability Research Initiative (UC Water) on the topic of governance and institutional design for Agencies. The report argues that that Agencies will need to be both fair and effective if they are to meet SGMA goals, and presents a set of nine criteria that should be considered in selecting governance options to meet these goals. Please see the attachment (report Executive Summary) and the full report² for further details. The present comments draw from this research.

The importance of governance to DWR's Regulations

There are two overarching reasons that topics related to governance and institutional design should be highlighted in the Final Regulations. The first is substantive. DWR should, to the extent possible, understand the basic elements of governance necessary for effective Agencies, develop regulations and guidance that support Agencies in assembling the necessary components of good governance, and gather information from Agencies that enables evaluation of their potential to govern groundwater resources effectively and fairly.

The second reason for including governance-related details in the Emergency Regulations is their crucial signaling function. Entities that are considering forming Agencies don't all clearly understand the range of challenges and responsibilities that being an effective Agency will entail. It is in the state's interest to help clarify, up front, the range of tasks Agencies will need to take on, including significant institutional challenges. To the extent that this forces prospective Agencies to think more carefully in advance about their ability to do the job, it will enable more informed decisions about not only *how* to form Agencies, but *whether* they are the best entities to do so. Specifically, while the Draft Regulations make clear the extent of the technical challenges for SMGA implementation, prospective Agencies would benefit from clearer and more detailed exposition of the necessary governance and institutional elements they would need, so they can evaluate clearly whether they are prepared to develop the necessary capacities.

It follows that it is in the state's interest to specify clearly the governance-related information it would like Agencies to provide. Absent clear specifications, some submissions are likely to describe governance structures only in general and uninformative terms.

Comments on the Draft Regulations

¹ Kiparsky, Michael, Dave Owen, Nell Green Nylen, Juliet Christian-Smith, Barbara Cosens, Holly Doremus, Andrew Fisher, and Anita Milman. 2016. Designing Effective Groundwater Sustainability Agencies: Criteria for Evaluation of Local Governance Options. Center for Law, Energy & the Environment, U.C. Berkeley School of Law. Available at www.law.berkeley.edu/groundwater-governance-criteria.

² *Id.*

Our comments offer some overarching suggestions, in addition to specific comments based on a subset of the criteria described in our recent report,³ namely *Authority, Funding, Human capacity, Participation, Representation, and Accountability*.

Throughout, we suggest additions in green, underlined text, and ~~deletions in red, strikethrough text~~.

Overarching suggestions

- **Criteria for Plan Evaluation** — Language in § 355.4 requiring Plans to achieve “substantial compliance” with the Regulations, along with the definition of the term, could create serious problems for the effectiveness of the Regulations. As defined, the term focuses on a limited subset of SGMA requirements, at the apparent expense of crucial procedural and substantive elements of developing Plans. The elements placed at risk could include much or all of the governance and institutional aspects of Plans that are the focus of our comments below. As we have argued, we believe these are essential to Agencies’ abilities to achieve sustainable groundwater management.

We recognize that DWR may see this language as a way to reduce its exposure to litigation. However, it would do so at the expense of potentially undermining implementation of the Act, and the Department’s crucial stewardship role. Innumerable regulations at all levels of government have succeeded with simple, direct language regarding compliance. The regulations should state what constitutes compliance, period. If an Agency demonstrates trivial or nonmaterial noncompliance, DWR can still judge its Plan to be adequate. The language regarding “substantial compliance” is confusing and unnecessarily complicating.

For these reasons, we strongly suggest that the term “substantial compliance” and its definition be removed from the introductory paragraph of **§ 355.4**, as per below, as well as from all other places it occurs in the Draft Regulations (e.g., § 355.2 and § 350.2).

- The Department shall evaluate a Plan to determine whether the Plan has the overall effect of achieving the sustainability goal for the basin, complies with the Act, and ~~is in substantial compliance~~ complies with this Subchapter. ~~Substantial compliance means that the Agency has attempted to comply with these regulations in good faith, that the supporting information is sufficiently detailed and the analyses sufficiently thorough and reasonable, in the judgment of the Department, to permit evaluation of the Plan, and the Department determines that any discrepancy would not materially affect the ability of the Agency to~~

³ *Id.*

~~achieve the sustainability goal or of the Department to evaluate the likelihood of the Plan to attain that goal.~~

- A Model Plan — A central desired outcome of the Regulations is increased clarity for Agencies as they develop their Plans. However, even the most carefully crafted regulations are, by their nature, relatively abstract and open to interpretation. For this reason, we suggest that DWR commit to developing a model Plan or model Plans. If done well, this could have great efficiency benefits by saving Agencies from wholly reinventing the wheel. More importantly, it could help to clarify and make concrete DWRs expectations.

Model plans have been used in other contexts. Much like SGMA, the EPA's Clean Power Plan regulations to address greenhouse gas emissions ask states to develop plans to control emissions, with EPA retaining reviewing authority. In addition to requiring those plans, EPA also developed and released a model state plan, which states could use as a starting point for their own work or could use as a preview of the plan EPA would adopt if the state declined to develop its own plan.⁴ Because the Clean Power Plan was finalized less than a year ago, and because of ongoing legal uncertainties, it is too soon to assess whether this model plan actually has been helpful. But it will likely provide states with, at the very least, an important baseline from which to build their plans. Similar help could be quite valuable to Agencies as well.

- Guidance for describing Projects and Management Actions — The Draft Regulations demand that Plans provide a variety of important information to DWR, including information about the specific actions Agencies will take to achieve sustainability goals. However, § 354.44 (Projects and Management Actions) is deliberately vague, due to the broad discretion SGMA gives Agencies to determine what methods they will use. While this generality is perhaps understandable, it leaves Agencies wondering what level and type of detail should be included when describing different types of projects and management actions. Therefore, it will be important for DWR to, *at a minimum*, provide guidance and examples (external to the Regulations) to show how this section's requirements should be addressed for likely projects and actions, such as for restrictions on groundwater pumping, groundwater replenishment projects, using a market-based mechanism to achieve re-allocation, etc.

For example, in order to avoid undesirable results and achieve sustainable management, many Agencies will need to affirmatively restrict groundwater extraction and use within their jurisdictions. But the Draft Regulations do not directly and explicitly address the how these Agencies should describe their plans to regulate and allocate future groundwater use among competing users and uses. To put the point

⁴ Federal Plan Requirements for Greenhouse Gas Emissions From Electric Utility Generating Units Constructed on or Before January 8, 2014; Model Trading Rules; Amendments to Framework Regulations, 80 Fed. Reg. 64966 (Oct. 23, 2015).

slightly differently, a Plan should explain how the Agency will determine whose groundwater use will be limited, to what extent, and what form limits will take. Of course, an exact accounting of future limits may not be possible, since limits may depend on future precipitation and other variables. But Plans should at least lay out a clear methodology for imposing and distributing limits, including contingencies for different sets of foreseeable conditions. Without such a methodology, an Agency may have incentive to defer the most difficult choices until some future crisis forces its hand. What's more, it will be difficult for DWR to fully evaluate a Plan that lacks this information, and, ultimately, successful implementation of such a Plan will be much more difficult for the Agency.

Authority and Funding

Authority and *funding* are both crucial elements of good governance. We commend DWR for including some language pertinent to these topics in the Draft Regulations – this language should be protected, expanded, and strengthened in DWR's final regulations. Arguably, two of the most challenging things that Agencies will need to do are making and implementing difficult decisions, including restricting the use of groundwater, and funding their activities. There is no question that every Agency will need to do both of these things. Both functions are tightly related to governance elements that should be put in place and clarified during Agency formation. Agencies are going to need to make difficult decisions, and their ability to make those decisions will depend in part on the strength and independence of their governance institutions—and on the ability of those institutions to secure needed funds.

To that end, we suggest the following changes in language from the Draft Regulations pertaining to legal authority, with notes on funding in the following section of our comments.

- **§ 354.6. Agency Information**, subsection (d):

(d) The existing legal authority of the Agency with specific reference to citations setting forth the duties, powers, and responsibilities of the Agency, including information demonstrating that the Agency has the necessary legal authority to implement all aspects of the Plan.

- **§ 354.44. Projects and Management Actions**, subsection (a)(7):

(7) A description of the financial ~~requirement~~ cost of and funding plan for each project and management action.

Human Capacity

Human capacity is the ability to successfully carry out tasks that enable an Agency to achieve its mission. Human capacity is a product of the people who work for or with an Agency, their

expertise in groundwater management and related tasks, and the resources they bring to bear. In order to evaluate whether a Plan will be effective, DWR will need to evaluate whether an Agency has clear understanding of, and plans for, developing the necessary human capacities. We suggest the following changes:

- **§ 354.6. Agency Information**, new subsection:
 - g) A description of the necessary human capacity required to carry out the Agency's activities during various phases of Plan implementation, and details of how the Agency will bring such necessary capacity to bear. This information should include a description of which tasks will be handled by in-house staff, which tasks will be handled by consultants, how many of each type of resources will be engaged, how hiring of each will be conducted, how they will be overseen, and a justification of the sufficiency of these staff to carry out the measures described in the Plan.
- **§ 354.44. Projects and Management Actions**, subsection (a)(5):
 - (5) An explanation of how the project or management action will be accomplished. If the Plan relies on water from outside the jurisdiction of the Agency, an explanation of the source and reliability of that water shall be included, as well as an explanation of the means, cost, and authority for accessing the water.

As we note above, the Regulations have an important signaling function in addition to their substantive requirements. To this end, DWR should consider making the following changes: to clarify expectations about resources available from DWR and other external sources:

- Replace the last sentence in the 3rd paragraph on the introductory page with:
Local agencies should be prepared for a significant effort in the planning phase, although limited technical and financial assistance will be available for plan development.
- **§ 353.6. Initial Notification**, subsection (c):
 - (c) Upon request, prior to adoption of a Plan, the Department shall provide reasonable assistance to an Agency regarding the elements of a Plan required by the Act and this Subchapter. Notwithstanding any advice provided by the Department, the Agency is solely responsible for the ~~development and adoption~~ development, adoption, and implementation of a ~~Plan~~ Plan that is capable of achieving sustainable groundwater management.

Participation and Representation

Broad and meaningful public participation in Plan development and implementation is required by SGMA. Representation, elected or appointed leaders bringing the interests of stakeholders into an Agency's decision making process, is an essential complement to direct participation. Public involvement in a fair, inclusive, and transparent process will help Agencies to develop

more robust outcomes, increasing the effectiveness of an Agency's efforts to achieve sustainability, while simultaneously fostering broad community support. Participation will help to build Agency capacity by bringing useful information, fresh perspectives, and creative ideas to government decision makers. Furthermore, evaluating the likelihood that a Plan will attain sustainability goals will require taking a hard look at the potential for a narrow set of interests to dominate Agency decision-making. Given these observations, meaningful participation and representation are essential elements of the good governance practices Agencies will need to implement SGMA.

To make the provisions in the Draft Regulations that touch on participation and representation more effective, we identify specific language we believe could be clarified and/or strengthened in the suggestions that follow.

We wholeheartedly agree with the need for Plans to describe the relevant institutional systems, but the Regulations could enumerate more clearly what information DWR will need in order to evaluate its potential effectiveness:

- **§ 350.2. General Principles** subsection (d)(4):
The institutional system that will maintain sustainability over the planning and implementation horizon. This information should include details of the governance structure for the Agency, including whether the Agency will be overseen by an elected or appointed board, details of how its board will be selected, what terms they will serve, how the hierarchy of authority will be structured, and under what conditions board members may be removed; details on the composition of the board and agency, such as distribution of membership based on expertise or interest group representation; details of conflict of interest rules in place for Agency staff and board members; details about how relationships with Agencies and other relevant entities in the same basin and adjacent basins will be handled, including collaborative processes and mechanisms for dispute resolution.

DWR should also add a timeframe for posting the materials it receives on its web site. The addition of a reasonable time frame (or time frames, for different types of submitted materials) is necessary to ensure that the public has adequate time to evaluate and comment on Plans and Plan amendments and is kept adequately informed of plan progress as measured in annual reports and five-year assessments.

- **§ 353.4. Reporting provisions**, subsection (c):
(c) All materials submitted to the Department shall be posted on the Department's Internet Web site within 30 days of receipt and no later than the beginning of an applicable public comment period.

Initial notification of an Agency's decision to develop a plan should explicitly require Agencies to identify how they intend to respond to SGMA's requirement that Agencies "shall encourage

the active involvement of diverse social, cultural, and economic elements of the population within the groundwater basin *prior to and during the development* and implementation of the groundwater sustainability plan."⁵ The initial notification of the decision to develop a Plan should describe how the Agency intends to implement the italicized portions of the requirement. Additionally, the reference to "relevant information" is unnecessary and confusing.

- **§ 353.6. Initial notification**, subsection (a):

- (a) Each Agency shall notify the Department, in writing, within 30 days of an Agency's decision to develop a Plan. The notification shall provide general information about the Agency's process for developing the Plan, including the manner in which interested parties may contact the Agency and participate in the development and implementation of the plan~~;~~ how the Agency will encourage the active involvement of diverse social, cultural, and economic elements of the population within the groundwater basin, and the time line and process for developing the communication plan required under Section 354.10(e). The Agency shall make the information contained in the notification publicly available by posting ~~relevant information~~ it on the Agency's Internet Web site.

The provisions for Public Comment could be clarified and, in some cases, extended. For example, subsection (a) should be changed to achieve consistency with § 353.6. We also suggest adding reasonable timeframes for the DWR to post, and for Agencies to respond to, comments. Furthermore, we believe that DWR should accept public comment and establish a comment period on amended Plans.

- **§ 353.8. Public Comment**

Any person may provide comments to the Department regarding any proposed~~, or~~ adopted~~, or amended~~ Plan.

- (a) The Department shall accept public comment on any aspect of an Agency's decision to develop a Plan as described in Section 353.6~~, including all elements~~ or on any element of the proposed Plan as it may be developed by the Agency.

- (b) The Department shall establish a comment period of no less than 60 days on an adopted Plan that has been accepted by the Department for evaluation pursuant to Section 355.2.

(c) The Department shall establish a comment period of no less than 45 days on an amended Plan submitted pursuant to Section 356.12.

- ~~(d)~~ The following guidelines apply to all public comments:

- (1) Public comment shall be submitted by written notice, and shall include the name, address, and electronic mail address of the person or entity providing the comments and information, with a duplicate copy of the comment provided to the Agency at the same time.

⁵ Water Code § 10727.8(a) (emphasis added)

- (2) Public comment should include a clear statement of the relevant issues and information addressed ~~that are the subject of the comments and information.~~ Public comment on an amended Plan should focus on the amended portions of the Plan and any new information that is relevant to the amendments or other Plan elements.
- (3) The level of detail provided by public comment need not be as comprehensive as that contained in the proposed, ~~or adopted,~~ or amended Plan, but public comment should rely ~~on similar scientific and technical information, including the reliance~~ upon the best available information and best available science.
- (~~d~~e) All comments and other information received shall be posted on the Department's Internet Web site within 30 days of receipt.
- (~~e~~f) The Department is not required to respond to comments, but ~~will~~ shall consider comments as part of its evaluation of a Plan or amended Plan.
- (~~f~~g) The Department shall give the Agency ~~a reasonable opportunity up to 45 days~~ to respond to public comment, including the opportunity to modify the Plan consistent with Section 355.2.

SGMA's requirements for Agencies to interact with other agencies and the public go beyond those identified in § 354.10 of the Draft Regulations. Therefore, we suggest changes to § 354.10 to incorporate additional elements of Water Code §§ 10723.2, 10727.8, and 10728.4. We also suggest replacing the word "stakeholder" (which does not appear in SGMA) with alternative language to avoid confusion about who classifies as a stakeholder. Finally, we suggest clarifying that Agencies should describe the specific measure they have taken and will take to encourage active involvement of diverse elements of the basin population.

- **§ 354.10 Notice and Communication**

Each Plan shall include a summary of information relating to the Agency's notification of and communication ~~by the Agency~~ with other agencies and interested parties, including the following:

- (a) The list of interested persons established and maintained by the Agency.
- (b) A description of the interests of all beneficial uses and users of groundwater in the basin, ~~and~~ the persons or entities representing those interests, and the nature of consultation with those interests.
- (c) A summary of the notifications that were provided to cities or counties within the area of the proposed Plan.
- (~~e~~d) A summary of public meetings at which the Plan was discussed or considered by the Agency.
- (~~d~~e) A copy of all comments regarding the Plan received by the Agency and a summary of any responses made by the Agency.
- (f) A description of the specific measures the Agency took to encourage the active involvement of diverse social, cultural, and economic elements of the population within the groundwater basin prior to and during the development of the Plan.
- (~~e~~g) A communication plan adopted by the Agency, including the following;

- (1) An explanation of the Agency's decision-making process and how ~~stakeholder~~ public input and input from other agencies ~~and public response~~ will be used.
- (2) Identification of opportunities for ~~stakeholder~~ engagement.
- (3) A description of ~~how~~ the specific measures the Agency is taking to encourage the active involvement of diverse social, cultural, and economic elements of the population within the basin during Plan implementation.
- (4) A schedule of milestones and scheduled dates for known projects or actions.
- (5) A description of the roles and responsibilities of local agencies and the public.

Accountability

Accountability is when Agencies are held responsible for their decisions and actions, and are answerable for their results, including whether or not Plans are effectively implemented. GSAs will be accountable to both the communities they regulate and represent and to the state.

We believe that DWR should not seek to take on dispute resolution responsibilities in the Regulations (§ 355.10). Two foundational elements of the structure of SGMA are 1) local entities have responsibility for developing and implementing Groundwater Sustainability Plans, and 2) the State Water Resources Control Board has authority under SGMA for designating probationary status if certain criteria occur, including if “the department, in consultation with the board, determines that a groundwater sustainability plan is inadequate or that the groundwater sustainability program is not being implemented in a manner that will likely achieve the sustainability goal.”⁶ Local intra- or inter-basin conflicts that result in the inability to move forward with sufficient implementation actions would likely indicate that these criteria had been met, triggering the involvement of the Board. Further, the authority cited for § 355.10 of the Draft Regulations pertains generally to DWR's responsibility to develop emergency regulations, and makes no mention of dispute resolution authority.

- **§ 355.10. Resolution of Conflicts by Department**
 - We recommend deleting this section in its entirety.

The inclusion of adaptive management also raises issues for accountability. Adaptive management is invoked in the Draft Regulations as a tool for local agencies (in paragraph 4 of the introductory page and in § 350.2 (e)). The term “adaptive management” is not defined in the Draft Regulations. The term has been used with a number of competing meanings in various circumstances. At best, adaptive management can imply an active state of formal, data-driven experimentation that in concept can allow continual improvement of management systems. Unfortunately, employing a loose definition of adaptive management coupled with fuzzy requirements can let decision-makers avoid difficult decisions and clear accountability, in effect

⁶ Water Code § 10735.2(a)

kicking the can down the road without making necessary hard choices.⁷ To be a responsible steward of SGMA implementation, DWR needs to drive clear definition and implementation of adaptive management where it is appropriate.

- **§ 350.2. General Principles**, subsection (e):
(e) Adaptive management may be employed as a tool for improving local and regional management of the state's groundwater basins within 20 years of Plan implementation and over the planning and implementation horizon. Adaptive management is defined as structured updating of Plans based on formal and transparent processes to incorporate advances in the best available information and in the best available science of the physical, social and economic elements of local groundwater systems. Each Plan must have a detailed and feasible path for achieving sustainability within 20 years of Plan implementation, although the particulars of that path can be updated with adaptive management as information and knowledge improve, including during periodic evaluation every five years as described in § 352.4 (b).

Adaptive management will be valuable if it Agencies make hard choices now but reserve the ability to revisit those choices later, but it will not be valuable if Agencies use adaptive management as an excuse for delaying difficult choices until some time in the future.

Relatedly, § 353.10 may in effect provide a reduction in the accountability of an Agency to follow through on implementing its plan. We recommend striking the first sentence from § 353.10 as follows:

- **§ 353.10. Withdrawal or Amendment of Plan**
 - ~~An Agency may withdraw a Plan at any time by providing written notice to the Department.~~ An Agency may amend a Plan at any time pursuant to the requirements of Section 356.12.

If the Department chooses to include language permitting withdrawal of a plan, it should also develop and describe a reasonable process for doing so, including engagement with neighboring Agencies, the Department, the State Water Resources Control Board, and the public, particularly where withdrawal of a plan could create unmanaged areas.

Conclusion

We greatly appreciate the opportunity to comment on the DWR's Draft Regulations. DWR is to be commended for embracing its leadership role in SGMA implementation. The challenges of its tasks in this area are substantial, but the historic significance of its charge is not to be underestimated. The Department deserves support and resources from the state for its SGMA

⁷ See, for example, Doremus, Holly. "Adaptive Management, the Endangered Species Act, and the Institutional Challenges of 'New Age' Environmental Protection." 41 *Washburn LJ* 50 (2001).

implementation efforts, as its activities and decisions will be crucial determinants of whether California is able to bring its management of this critical resource into the modern age.



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MARCH 2016

EXECUTIVE SUMMARY

Designing Effective Groundwater Sustainability Agencies:

CRITERIA FOR EVALUATION OF LOCAL GOVERNANCE OPTIONS

Michael Kiparsky, Dave Owen, Nell Green Nylen, Juliet Christian-Smith, Barbara Cosens, Holly Doremus, Andrew Fisher, and Anita Milman

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With the passage of the Sustainable Groundwater Management Act (SGMA) in 2014, California took a historic step towards managing the state's groundwater resources. SGMA adopts a state policy of managing groundwater resources "sustainably for long-term reliability and multiple economic, social, and environmental benefits for current and future beneficial uses." Although these ambitious goals are critical to California's future water security and sustainability, major questions remain about how to achieve them.

Designing institutions for sustainable groundwater management is one of the most pressing challenges for SGMA implementation.

Local entities in medium- and high-priority basins must establish Groundwater Sustainability Agencies (GSAs) by June 2017. GSA design and structure will play a critical role in meeting the sustainability goals required by SGMA. Because designing new institutions for good governance is not easy, the need for information and guidance is acute.

SGMA leaves great latitude for local decision making. Primary responsibility for groundwater governance lies with GSAs, to be established by local entities in groundwater basins or sub-basins. SGMA does not specify the details for institutional design of GSAs, nor what specific governance actions must be taken to achieve sustainable groundwater management. Instead, the legislation provides an array of regulatory and non-regulatory tools—mostly optional—from which

GSAs can choose. Those tools, in addition to existing authorities already available to local agencies, will provide the basis for groundwater governance in each basin. The relatively short timeline for GSA formation requires local governments and other stakeholders to analyze available options and decide, quickly, how to form novel agencies. These agencies should be armed with the tools necessary to meet current and future groundwater challenges.

While no governance solution is ever perfect, GSAs will have a greater chance of governing fairly and effectively if their design anticipates some common challenges of shared resource governance.

The primary purpose of this document is to assist stakeholders and decision makers in evaluating the design of GSAs. It aims to empower them to think critically about whether proposed GSAs will meet their needs now and in the future, and—if not—which tools may help to achieve these goals. The framework presented here draws on experience in other natural resource management contexts and on research on governance and institutional design to provide lessons learned and illustrative examples.

We propose that local agencies and participating stakeholders use nine criteria to evaluate newly forming GSAs (Figure 1). These are: *scale*, *human capacity*, *funding*, *authority*, *independence*, *participation*, *representation*, *accountability*, and *transparency*. We group these criteria into two general categories: criteria most closely tied to the efficacy of a GSA, and criteria that primarily bear on the fairness of its decisions.

The criteria we define are inter-related, overlapping, and mutually supportive. They should help those involved in GSA formation and development to think proactively and design more effective organizations.

Efficacy is the ability of a GSA to achieve its goals in the face of inevitable challenges. In order to achieve efficacy, GSAs will need to address the following five criteria.

- *Scale* is the geographic extent of a GSA's jurisdiction relative to the resource being managed. Ideally, the scale of governance would reflect the natural resource itself. Where jurisdictional and resource boundaries do not align, GSAs will need to think carefully about coordination among multiple entities.
- *Human capacity* is the ability to successfully carry out tasks that enable a GSA to achieve its mission. Human capacity is a product of the people who work for or with a GSA, their expertise in groundwater management, and the resources they bring to bear. Managing groundwater requires a wide variety of skills and capabilities, ranging from monitoring and modeling to legal analysis to community outreach and enforcement. GSAs should carefully consider the capabilities they will need to perform necessary functions and ensure they are able to draw upon sufficient resources. Human capacity can come either directly from staff or by accessing reliable external resources.
- *Funding* is financial resources for capital expenditures such as acquisition of land, facilities, or water rights, as well as ongoing expenditures such as salaries, facility operations and maintenance, and other costs. A GSA should consider whether it will have adequate funding to carry out all aspects of its mandate throughout its life cycle. GSAs should ensure they will have sufficient authority to raise additional funds in a fair manner as they become necessary.
- *Authority* is power delegated by the state and accepted by a GSA that enables the GSA to execute the tasks necessary to carry out its mission. Authorities will include those already in place in addition

to new ones granted by SGMA. GSAs will need to exercise authority consistent with the challenge of implementing and enforcing an effective groundwater sustainability program.

- *Independence* is the ability of a GSA to operate freely within its defined purview, protected from external pressures that could divert the GSA from achieving its fundamental goals. Independence includes the ability of a GSA to make decisions that support sustainable groundwater management, even when those decisions are costly or unpopular.

Fairness is the GSA's ability to perform its actions in a manner that is both distributionally and procedurally equitable.

Distributional equity refers to the benefits and costs of groundwater management. Procedural equity refers to fair mechanisms for decision making. SGMA does not clearly define how costs and benefits should be distributed, either within a basin or between basins, nor does it specify components for procedural fairness. Fairness matters not only for its own sake, but also because a GSA that operates unfairly is unlikely to retain the stakeholder support necessary to carry out its mission.⁸ Therefore, GSAs should address the following four criteria to design institutions that can achieve sustainability with fairness.

It is crucial to understand that while we discuss these criteria as primarily focusing on fairness, they all impact the durability of decisions, reduce conflict, and ease implementation, and as such contribute strongly to efficacy as well as fairness.

- *Participation* is direct, meaningful stakeholder engagement in the decision making process. Local governments should develop effective mechanisms for substantive participation by a broad stakeholder base during GSA formation, as well as during subsequent planning and implementation phases. Specific mechanisms and support may be needed to ensure that residents from disadvantaged communities can meaningfully engage.

- *Representation* is when elected or appointed leaders bring the interests of stakeholders into a GSA's decision making process. Representation is complementary to participation, offering an additional indirect pathway of engagement. Fair representation gives voice to people with a diversity of interests likely to be affected by a GSA's decisions. Procedures for election or appointment of representatives should be carefully scrutinized, as should decision making processes, conflict of interest rules and other elements of governance.
- *Accountability* is when GSAs are held responsible for their decisions and actions, and are answerable for their results, including whether or not groundwater sustainability plans (GSPs) are effectively implemented. GSAs will be accountable to both communities they represent and to the state. GSAs will be formed from local public agencies whose governing boards are subject to local public elections. State oversight will play an important role in achieving accountability, but monitoring and enforcement activities by GSAs themselves will also be critical.

- *Transparency* is operating openly and accessibly, such that stakeholders and agencies with responsibility for oversight can effectively observe, understand, and weigh in on the actions a GSA is taking, its process for decision making, and its progress toward meeting sustainability goals.

SGMA is more than a novel experience for California.

It is a grand experiment in the design of institutions for groundwater governance. Arguably, implementation of SGMA has the potential to transform the state from having a system of groundwater management that is among the most deficient in the country to having a set of locally inclusive governance systems that will achieve long-term groundwater sustainability. The consequences of poor design choices for GSAs – choices that aren't optimal for a particular jurisdiction, or result in undesirable outcomes – could be severe. Some problems may not become apparent before substantial and irreversible harm is done, or before it is exceedingly difficult to course correct. Therefore, for the long-term success of SGMA, stakeholders and decision makers need to think carefully now about what factors contribute to good governance, and how to incorporate those factors into new institutions ([Table 1](#)).

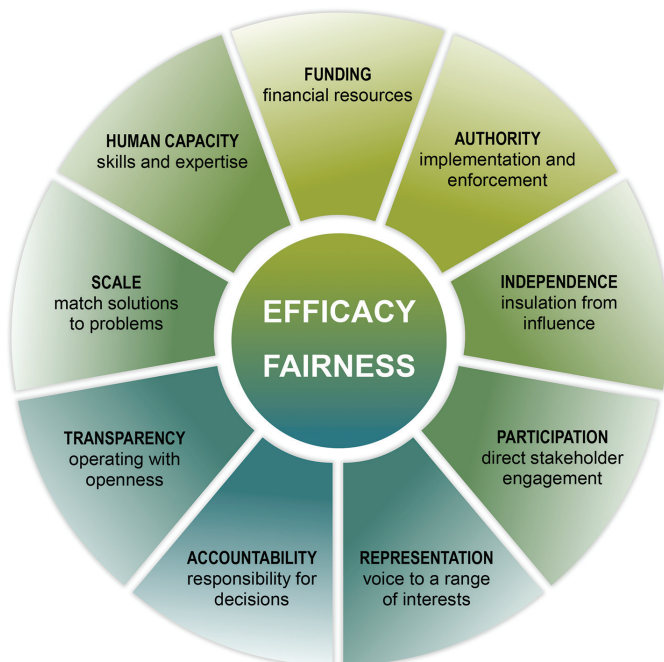


Figure 1: Governance criteria. A successful path to groundwater sustainability will require governance that is both fair and effective. GSAs will need to carefully consider the criteria shown here in their institutional design, each of which is necessary to achieve both fairness and efficacy in groundwater management.

The full report is available online at www.law.berkeley.edu/groundwater-governance-criteria

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Table 1: Evaluating GSA governance: Basic questions about GSA governance follow from the nine criteria in this document.

Scale	<ul style="list-style-type: none"> • How do the boundaries of the GSA (or coordinated GSAs) compare to the boundaries of the groundwater basin or subbasin? • What plans are in place to deal with any gaps in coverage, aquifers shared with other GSAs, or overlap with other related entities? • What plans are in place to address connections between groundwater and surface water? • How will the GSA and GSP coordinate with land use planning and regulatory agencies within and outside the basin on issues like well permitting and aquifer recharge? • What mechanisms will ensure effective coordination with neighboring GSAs?
Human capacity	<ul style="list-style-type: none"> • What skills and expertise will be required during the GSA formation, GSP development, and GSP implementation phases defined in this report? • Will these capacities exist in the proposed GSA? If not, how will these capacities be developed or accessed?
Funding	<ul style="list-style-type: none"> • How much and what types of funding will be needed for the GSA to fulfill its functions over time? • What access to funding is available from the existing entity or entities considering GSA formation? How does this align with projected resource needs during all phases of SGMA implementation? • Is the GSA planning to exercise the authority to collect fees granted by SGMA? If so, via what mechanism(s)? • How will the GSA balance the needs to integrate agencies representing disadvantaged communities and to ensure that they are not unduly burdened financially?
Authority	<ul style="list-style-type: none"> • What powers and authorities is the GSA planning to assume from those available under the law, and under what circumstances will it exercise them? • What is the rationale for, and what are the likely consequences of, not assuming or exercising certain authorities? • How will the GSA ensure its authority is not duplicative of or conflicting with pre-existing authorities, and coordinate effectively with other entities with relevant authorities? • How will the GSA enforce its decisions on groundwater users if they fail to provide required information or violate other requirements, like pumping restrictions?
Independence	<ul style="list-style-type: none"> • What mechanisms will ensure the GSA is capable of making difficult decisions necessary to achieve sustainable groundwater management in the basin, even in the face of pressure from competing interests?
Participation	<ul style="list-style-type: none"> • How will the GSA ensure meaningful participation by a broad spectrum of groundwater users and other affected stakeholders in its decision making? • What capacities do stakeholders have, and what additional support do they need, to participate effectively in all phases of GSA activities?
Representation	<ul style="list-style-type: none"> • How will representatives be chosen? • How will the GSA ensure adequate representation of diverse stakeholder groups among GSA decision makers? • What role will representatives play in evaluating governance options?
Accountability	<ul style="list-style-type: none"> • What mechanisms will the GSA put in place to ensure that its employees and consultants do good work? • What mechanisms will the GSA put in place to ensure effective oversight and enforcement of fees, extraction limits, and other requirements it adopts? • How will the GSA measure progress toward sustainable management? • How will the GSA be accountable to groundwater users and other stakeholders for the success of its management actions? • How will the GSA engage with DWR and the Board in their oversight and enforcement roles?
Transparency	<ul style="list-style-type: none"> • How will the GSA ensure transparent decision making? • What information will be disclosed, what information withheld, and why? From which stakeholders, decision makers and community groups? • How will assumptions, data, and modeling results be communicated to the public? • How will the GSA track and communicate progress toward meeting sustainability goals?